Please amend the accompanying specification and claims, which is a copy of the specification and claims filed in parent application Serial No. 09/118,307, as follows:

IN THE SPECIFICATION:

Page 1, line 4, before the heading "Background and Summary of the Invention", please add the following new section:

A1

--Cross Reference to Related Applications

This application is a divisional of application Serial No. 09/118,307, filed July 16, 1998, entitled "Single Crystal TFT From Continuous Transition Metal Delivery Method," invented by Maekawa et al.--

Page 8, lines 9-16, please delete the following paragraph:

"An ion implantation method implants transition metal within a rectangular window having a width in the range from 20 to 50 microns and a length of at least 50 microns. The exact length is dependent on the number of crystallization sites to be formed. In this manner, a concentration of transition metal no more than 2×10^{19} atoms per cubed centimeter, and a density of transition metal nucleus sites no more than 1×10^{7} square centimeters is maintained. The distance between transition metal nucleus sites is no less than 2 microns."

and substitute therefore the following rewritten paragraph:

a2

--An ion implantation method implants transition metal within a rectangular window having a width in the range from 20 to 50 microns and a length of at least 50 microns. The exact length is dependent on the number of crystallization sites to be formed. In this manner, a concentration of transition metal no more than 2 x 10^{19} atoms per cubed centimeter, and a density of transition metal nucleus sites no more than 1 x 10^{7} per square centimeter is maintained. The distance between transition metal nucleus sites is no less than 2 microns.--

Page 11, lines 8-27, please delete the following paragraphs:

"Fig. 2 illustrates transistor 10 of Fig. 1 following an annealing process. Transition metal 16 has moved along a lateral growth front out from silicon areas 12a and 12b. At the finish of the annealing process the two growth fronts intersect in the center of the channel region, labeled 12d. The silicon regions behind the growth front of transition metal 16 have been transformed with transition metal 16 into crystallized silicon 18. That is, silicon areas 12a, 12b, and parts of 12c have been crystallized. Although the bulk of silicon areas 12a and 12b may be crystallized silicon, devoid of transition metal semiconductor compounds, such as silicide, the limited source of amorphous silicon in area 12c and the intersecting fronts may result in an area of silicide in channel region 12d.

Typically, source drain areas 12a and 12b are amorphized in response to large doping implants in the formation of active source/drain regions. When source/drain regions 12a and 12b are annealed again for implant activation, a danger exists that transition metal grains 16 in channel region 12d could migrate back into the amorphous source/drain regions 12a

and 12b. The presence of transition metal grains in source/drain regions 12a and 12b increases leakage current as transition metal 16 tends to act as a short across the reverse bias junction."

and substitute the following rewritten paragraphs:

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a3

--Fig. 2 illustrates transistor 10 of Fig. 1 following an annealing process. Transition metal 16 has moved along a lateral growth front out from silicon areas 12a and 12b. At the finish of the annealing process the two growth fronts intersect in the center of the channel region, labeled 12c. The silicon regions behind the growth front of transition metal 16 have been transformed with transition metal 16 into crystallized silicon 18. That is, silicon areas 12a, 12b, and parts of 12c have been crystallized. Although the bulk of silicon areas 12a and 12b may be crystallized silicon, devoid of transition metal semiconductor compounds, such as silicide, the limited source of amorphous silicon in area 12c and the intersecting fronts may result in an area of silicide in channel region 12c.

Typically, source drain areas 12a and 12b are amorphized in response to large doping implants in the formation of active source/drain regions. When source/drain regions 12a and 12b are annealed again for implant activation, a danger exists that transition metal grains 16 in channel region 12c could migrate back into the amorphous source/drain regions 12a and 12b. The presence of transition metal grains in source/drain regions 12a and 12b increases leakage current as transition metal 16 tends to act as a short across the reverse bias junction.--

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Page 13, lines 17-27, please delete the following paragraph:

"Fig. 6 depicts of transistor 200 of Fig. 4 following annealing. Amorphous first film 202 is annealed to form a first area of crystallized first film 208. First area 208 (cross-hatched) is a single grain of crystal. In subsequent steps a pattern is etched into first area 208 of crystallized first film to form the source/drain regions 209 (double cross-hatched), whereby a transistor is formed having high electron mobility and low leakage current in the transistor active areas. Areas 210 and 212 are single crystal grains for the fabrication of neighboring transistors. In some aspects of the invention, the subsequently formed transistors overlie neighboring areas of crystallized film, such as areas 208, 210, and 212. In those circumstances a transistor is formed from multiple crystal grains."

and substitute therefore the following rewritten paragraph:

A4

--Fig. 6 depicts transistor 200 of Fig. 5 following annealing. Amorphous first film 202 is annealed to form a first area of crystallized first film 208. First area 208 (cross-hatched) is a single grain of crystal. In subsequent steps a pattern is etched into first area 208 of crystallized first film to form the source/drain regions 209 (double cross-hatched), whereby a transistor is formed having high electron mobility and low leakage current in the transistor active areas. Areas 210 and 212 are single crystal grains for the fabrication of neighboring transistors. In some aspects of the invention, the subsequently formed transistors overlie neighboring areas of crystallized film, such as areas 208, 210, and 212. In those circumstances a transistor is formed from multiple crystal grains.--

Page 15, lines 9-15, please delete the following paragraph:

"Transition metal 204 doping is selected from the group consisting of ion implantation and CVD deposition methods. The first concentration of transition metal is less than 2×10^{19} atoms per cubed centimeter, and the first density of transition metal nucleus sites are less than 1×10^{7} per square centimeters. Only three nucleation sites are shown in Figs. 5-7 for the purpose of clarity. First distance 206 between transition metal nucleus sites 204 is no less than 2 microns."

and substitute therefore the following rewritten paragraph:

a5

--Transition metal 204 doping is selected from the group consisting of ion implantation and CVD deposition methods. The first concentration of transition metal is less than 2×10^{19} atoms per cubed centimeter, and the first density of transition metal nucleus sites are less than 1×10^{7} per square centimeter. Only three nucleation sites are shown in Figs. 5-7 for the purpose of clarity. First distance 206 between transition metal nucleus sites 204 is no less than 2 microns.--

Page 17, line 25, through page 18, line 2, please delete the following paragraph:

"Fig. 12c depicts the concentration of Ni atoms 306 in the later stages of annealment. A nucleation site 204 is formed in the center of window 308, with relatively low concentrations of Ni atoms 306 is the remaining area of window 308."

and substitute therefore the following rewritten paragraph:

a6

--Fig. 12c depicts the concentration of Ni atoms 306 in the later stages of annealment. A nucleation site 204 is formed in the center of window 308, with relatively low concentrations of Ni atoms 306 in the remaining area of window 308.--

Page 18, lines 8-14, please delete the following paragraph:

"Fig. 13 depicts further fabrication steps of transistor 300 of Fig. 10 after annealing and transition metal semiconductor compound 316 removal. An oxide layer 320 overlies the channel region 322. A gate electrode 324 overlies oxide layer 322. In some aspects of the invention, phosphorous 326 is implanted into source 328 and drain 330 regions. Alternately, boron 326 is implanted. Annealing is performed to activate implanted species 326."

and substitute therefore the following rewritten paragraph:

a7

--Fig. 13 depicts further fabrication steps of transistor 300 of Fig. 10 after annealing and transition metal semiconductor compound 316 removal. An oxide layer 320 overlies the channel region 322. A gate electrode 324 overlies oxide layer 320. In some aspects of the invention, phosphorous 326 is implanted into source 328 and drain 330 regions. Alternately, boron 326 is implanted. Annealing is performed to activate implanted species 326.--

Page 21, lines 12-16, please delete the following paragraph:

"In some aspects of the invention, Step 404 includes a first concentration of transition metal no more than 2 x 10^{19} atoms per cubed centimeter, and the first density of transition metal nucleus sites no more than 1 x 10^{7} square centimeters. Step 404 includes a first distance between transition metal nucleus sites of no less than 2 microns."

and substitute therefore the following rewritten paragraph:

A8

--In some aspects of the invention, Step 404 includes a first concentration of transition metal no more than 2 x 10^{19} atoms per cubed centimeter, and the first density of transition metal nucleus sites no more than 1 x 10^{7} per square centimeter. Step 404 includes a first distance between transition metal nucleus sites of no less than 2 microns.--

Page 22, lines 17-27, please delete the following paragraph:

"Fig. 16 is a flowchart illustrating another aspect of a method of forming a crystallized film with large crystal grains. Step 500 provides a semiconductor film and a transition metal. Step 502 heats the semiconductor film to a temperature in the range from 700 to 750 degrees C. Step 504 heats the semiconductor film for a duration in the range from 1 to 5 minutes. Step 506 supplies a transition metal concentration of no more than 2 x 10^{19} atoms/cm^3. Step 508 maintains a transition metal nucleation site density of no more than 1 x 10^7/cm^2. Step 510 maintains a distance between transition

metal nucleation sites of less than 2 microns. Step 512 forms large grains of crystallized semiconductor film corresponding to the distance between transition metal nucleation sites."

and substitute therefore the following rewritten paragraph:

a9

--Fig. 16 is a flowchart illustrating another aspect of a method of forming a crystallized film with large crystal grains. Step 500 provides a semiconductor film and a transition metal. Step 502 heats the semiconductor film to a temperature in the range from 700 to 750 degrees C. Step 504 heats the semiconductor film for a duration in the range from 1 to 5 minutes. Step 506 supplies a transition metal concentration of no more than 2×10^{19} atoms/cm^3. Step 508 maintains a transition metal nucleation site density of no more than 1×10^7/cm^2. Step 510 maintains a distance between transition metal nucleation sites of no less than 2 microns. Step 512 forms large grains of crystallized semiconductor film corresponding to the distance between transition metal nucleation sites.--